

AD-A143 595

19319A MLRS MISSILE NUMBERS 440 483 AND 459 ROUND
NUMBERS V-581/AV-01 THR..(U) ARMY ELECTRONICS RESEARCH
AND DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER

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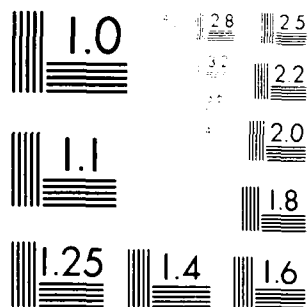
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MICROGRAPH RESOLUTION TEST CHART
 NATIONAL BUREAU OF STANDARDS-1963-A

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DR-1341

May 84

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AD-A143 595

METEOROLOGICAL DATA REPORT

19319A MLRS

Missile Number 440, 483, and 459

Round Number V-581/AV-01 thru V-583/AV-03

11 May 1984

by

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Program Support Coordinator

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AVN Number 349-9568

SELECTED
JUL 30 1984
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ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19319A MLRS, Missile Number 440, 483, and 459, Round Number V-581/AV-01 thru V-583/AV-03 are presented in tabular form.		

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INTRODUCTION

19319A MLRS, Missile Numbers 440, 483 and 459, Round Numbers V581/AV-01, V582/AV-02 and V583/AV-03, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1422:00 and 1422:05 and 1422:10 MDT, 11 May 84. The scheduled launch times were 1400:00, 1400:03.5 and 1400:07 MDT.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

1. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 Minutes.

(2) Anemometer data were provided from existing tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from Pilot-balloon observations at:

SITE AND ALTITUDE

LC-33 2 km

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

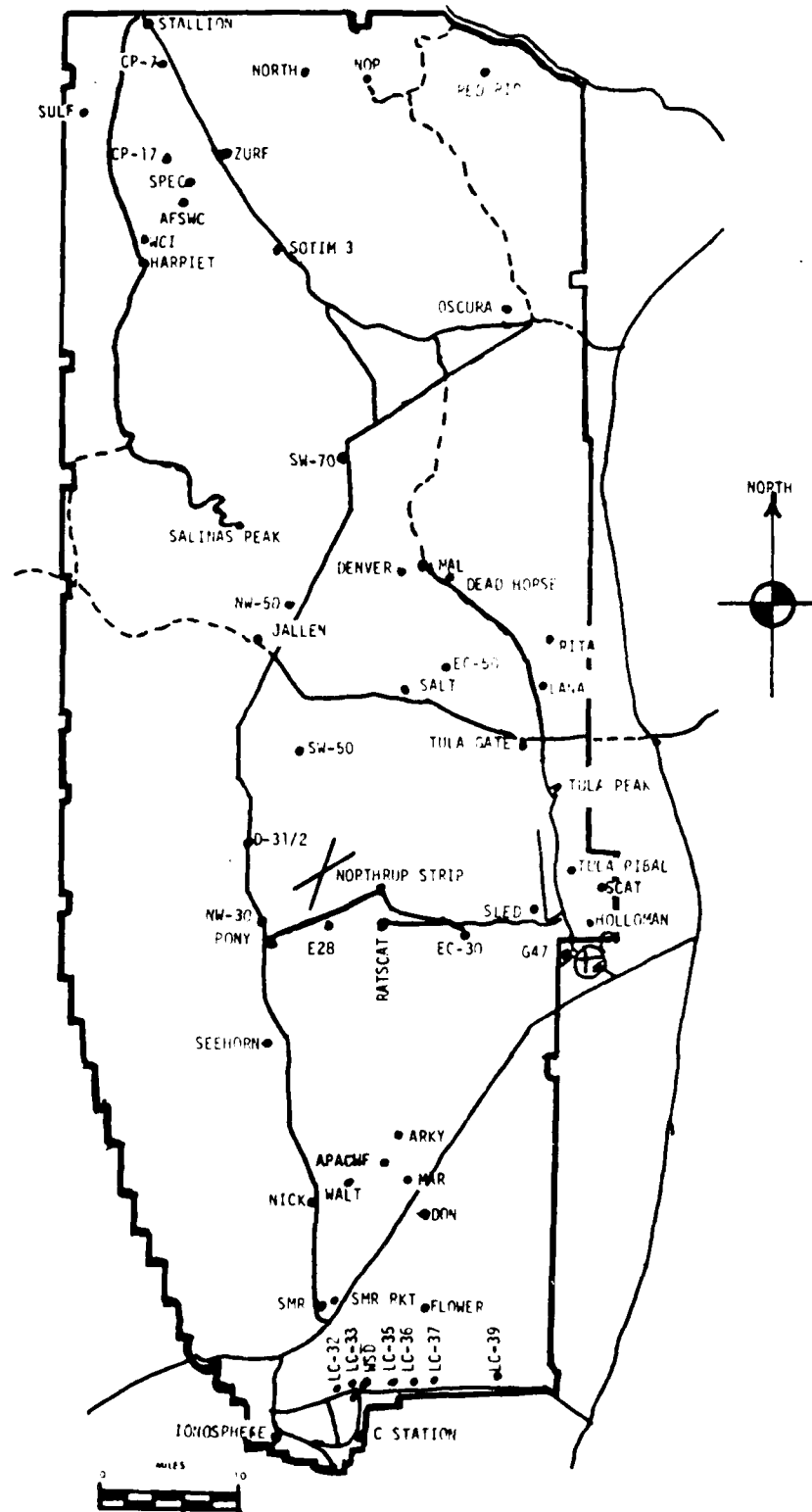
SITE AND TIME

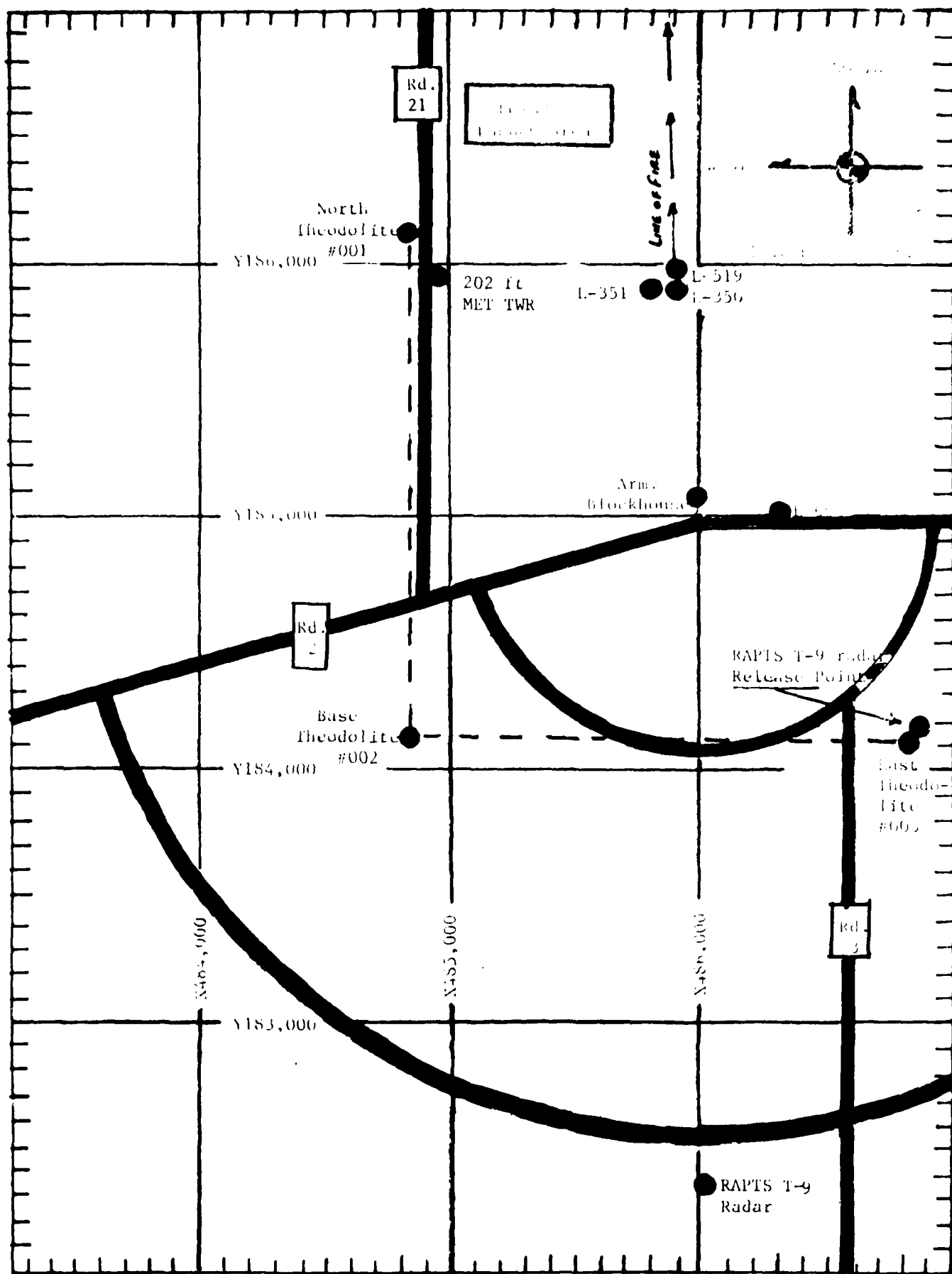
WSD	1230 MDT
SMR	1230 MDT
SMR	1315 MDT
WSD	1422 MDT
SMR	1422 MDT



AI

WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

TABLE 1									
STATION LC-33									
DATE 11 MAY 1984		May 1984		YEAR		X= 484,982.64		Y= 185,957.73 H= 3995.00	
TIME M D I	PRESSURE mb	TEMPERATURE OF °C	DEW POINT OF °C	RELATIVE HUMIDITY %	DENSITY gm/m ³	DIRECTION degs	WIND SPEED kts	CHARACTER kts	VISIBILITY
1422	876.8	34.5	3.3	14		240	14		50

OBSERVATIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	AMT	TYPE	AMT	TYPE	
	0	cu	6000				

PSYCHROMETRIC COMPUTATION

TIME: MDT	1422	
DRY BULB TEMP.	34.5	
WET BULB TEMP.	16.0	
WET BULB DEPR.	18.5	
DEW POINT	3.3	
RELATIVE HUMID.	14	

LC-33 METEOROLOGICAL TOWER
ANEMOMETER MEASURED WIND DATA

WSTM COORDINATES X=484,982.64 Y=185,957.73 H=3983.00(BASE)

TABLE NO. 2

DATE 11 May 84 1422 M D T
DAY MONTH YEAR TIME

LEVEL #1 12 FT AGL			LEVEL #2 62 FT AGL		
T-TIME (SEC)	DIR (DEG)	SPEED (KTS)	T-TIME (SEC)	DIR (DEG)	SPEED (KTS)
T-30	289	17	T-30	294	20
T-20	292	09	T-20	297	17
T-10	306	13	T-10	299	14
T- 0 (1st T)	309	13	T- 0 (1st T)	305	13
T+10	320	07	T+10	322	09
T+20			T+20		
T+30			T+30		
T+40			T+40		
T+50			T+50		
T+60			T+60		

LEVEL #3 102 FT AGL			LEVEL #4 202 FT AGL		
T-TIME (SEC)	DIR (DEG)	SPEED (KTS)	T-TIME (SEC)	DIR (DEG)	SPEED (KTS)
T-30	278	20	T-30	267	19
T-20	296	14	T-20	295	13
T-10	281	11	T-10	280	10
T- 0 (1st T)	311	12	T- 0 (1st T)	294	11
T+10	315	12	T+10	279	17
T+20			T+20		
T+30			T+30		
T+40			T+40		
T+50			T+50		
T+60			T+60		

TABLE 3

PILOT-BALLOON MEASURED WIND DATA

DATE 11 May 1984

SITE: LC-33
 TIME: 1300 MDT
 ASTM COORDINATES:
 X= 486.037.24
 Y= 182,350.16
 H= 3,977.30

SITE: LC-33
 TIME: 1345 MDT
 WSTM COORDINATES:
 X= 486.037.24
 Y= 182,350.16
 H= 3,977.30

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	210	08
150	266	02
210	268	06
270	265	11
330	264	12
390	273	10
500	270	07
650	279	08
800	313	05
950	323	10
1150	346	10
1350	006	09
1550	316	09
1750	004	10
2000	003	12

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	240	08
150	304	14
210	298	12
270	301	09
330	298	07
390	304	09
500	MISG*	
650	MISG*	
800	MISG*	
950	230	10
1150	255	10
1350	297	05
1550	272	04
1750	273	03
2000	MISG*	

All data obtained from RAPTS F-9 radar tracked pilot-balloon observations.

*Data Missing due to radar jumping track.

TABLE 3 cont'd

PILOT-BALLOON MEASURED WIND DATA

DATE 11 May 1984

SITE: LC-33
 TIME: 1422 MDT (T-0 minutes)
 WSTM COORDINATES:
 X= 486,037.24
 Y= 182,350.16
 H= 3,977.30

SITE:
 TIME:
 WSTM COORDINATES:
 X=
 Y=
 H=

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	240	14
150	271	02
210	271	02
270	270	08
330	MISC	
390	MISC	
500	MISC	
650	300	12
800	304	11
950	283	10
1150	282	10
1350	274	08
1550	MISC	
1750	MISC	
2000	MISC	

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		
150		
210		
270		
330		
390		
500		
650		
800		
950		
1150		
1350		
1550		
1750		
2000		

TABLE 4

AIMING AND T-TIME COMPUTER MESSAGE

11 May 1984

ASD 1230 MDT	SMR 1230 MDT	SMR 1230 MDT	ASD 1420 MDT
ME10M1324064	ME10M1325064	ME10M1325064	ME10M1324064
111850122878	111850122878	111950122878	112050122877
00533008 30690878	00335004 30690878	00375008 30690878	00533010 30690877
801330012 30410868	01504008 30410808	01135008 30410808	01465016 30590867
801552013 30060844	02553006 30100844	02105001 30110844	02461013 30210843
803574011 29890806	03531007 29700806	03451004 29700807	03513012 29820801
00587015 29060766	04819006 29200761	04472007 29200762	04515012 29280760
05536011 28620717	05001006 28700718	05475006 28700718	05521010 28800717
06535011 28160672	06015004 28200672	06500007 28200672	06582005 28320671
07535011 27780638	07535008 27800638	07535011 27800638	07555010 27800638
08491010 27490607	08475010 27500608		08515010 27470608
09485010 27090601	09485010 27170602		09535010 27100601
10515008 26730527	10440008 26780528		10588008 26760528
11220006 26350494	11126005 26380495		11414003 26150494
11575011 25740448	11562006 26780449		

T-time data from ASD 11 B

T-time data from ASD 11 B

Estimated time from ASD 11

MDT time data

SMR 1420 MDT
ME10M1325064
112050122878
00533008 30690878
01418011 30630868
02419006 30310847
03442010 29880807
04507000 29360762
05537004 28840718
06535005 28360677
07535010 27890637
08531010 27550599
09521015 27180560
10588005 26760528
11353003 26350496
12315008 25770449

GEODETIC COORDINATES
32.40043 LAT DEG
106.37055 LON DEG

SIGNIFICANT LEVEL DATA
1820020277
WHITE SANDS

STATION ALTITUDE 3989.00 FEET MSL
11 MAY 84 1230 MDT
ASCENSION NO. 277

TABLE 5

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
977.5	3989.0	32.7	-2.9	10.0
967.5	4328.0	29.6	-0.7	14.0
950.0	4921.4	27.4	-1.5	15.0
906.3	6437.2	22.1	-5.7	15.0
757.1	8213.0	16.9	-9.0	16.0
718.4	9658.9	12.7	-12.4	16.0
700.0	10381.7	11.2	-12.2	19.0
657.9	12066.9	6.4	-15.5	19.0
622.7	13539.5	3.2	-20.9	15.0
604.7	14319.7	2.7	-22.1	14.0
572.2	15777.0	-1.4	-24.6	15.0
500.7	19260.8	-8.8	-27.1	21.0
399.5	24819.3	-22.9	-41.1	17.0

STATION ALTITUDE 3949.0 FEET MSL
11 MAY 84 1230 MDT
ASCENSION NO. 277

UPPER AIR DATA
1420J20277
WHITE SANDS
TABLE 6

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3939.0	677.6	32.7	-2.9	10.0	997.5	682.0	300.0	8.9	1.000242
4000.0	877.3	32.6	-2.8	10.1	997.4	681.9			1.000242
4500.0	862.4	29.0	-2.9	14.3	991.9	678.0			1.000245
5000.0	847.7	27.1	-1.7	15.0	981.1	675.9			1.000241
5500.0	833.0	25.4	-3.1	15.0	970.0	673.9			1.000237
6000.0	818.7	23.6	-4.5	15.0	959.0	671.8			1.000233
6500.0	804.5	21.9	-5.8	15.0	948.1	669.8			1.000228
7000.0	790.4	20.5	-6.6	15.3	936.1	668.1			1.000225
7500.0	776.5	19.0	-7.7	15.6	924.4	666.4			1.000221
8000.0	762.8	17.5	-8.6	15.9	912.8	664.7			1.000218
8500.0	749.3	16.1	-9.7	16.0	901.2	663.0	341.0	15.4	1.000214
9000.0	735.9	14.6	-10.9	16.0	889.5	661.3	328.0	13.7	1.000210
9500.0	722.8	13.2	-12.0	16.0	878.2	659.6	315.9	10.6	1.000207
10000.0	709.8	12.0	-12.3	16.9	866.0	658.3	329.9	8.9	1.000204
10500.0	697.0	10.9	-12.4	18.1	851.8	657.0	350.4	8.6	1.000201
11000.0	684.4	9.4	-13.4	18.4	842.6	655.3	5.0	9.7	1.000198
11500.0	671.8	8.0	-14.4	18.7	831.4	653.6	14.8	11.8	1.000195
12000.0	659.5	6.9	-15.4	19.0	820.4	651.9	16.3	16.2	1.000192
12500.0	647.3	5.5	-17.0	17.8	808.7	650.6	8.7	17.8	1.000188
13000.0	635.4	4.4	-18.9	16.5	796.9	649.3	338.4	16.4	1.000184
13500.0	623.6	3.3	-20.7	15.1	785.3	648.0	311.1	16.9	1.000181
14000.0	612.0	2.9	-21.6	14.4	771.8	647.5	287.2	18.8	1.000177
14500.0	600.6	2.2	-22.4	14.1	759.4	646.6	279.7	24.5	1.000174
15000.0	589.3	1.3	-23.3	14.5	749.0	645.0	276.6	30.5	1.000172
15500.0	578.2	-0.6	-24.1	14.8	738.7	643.3	275.8	34.1	1.000169
16000.0	567.3	-1.9	-24.7	15.4	728.1	641.8	275.2	34.6	1.000166
16500.0	556.4	-2.9	-25.0	16.2	716.9	640.6	274.4	24.9	1.000164
17000.0	545.7	-4.0	-25.3	17.1	706.0	639.3	270.6	16.1	1.000161
17500.0	535.3	-5.1	-25.6	18.0	695.2	638.0	253.4	9.1	1.000159
18000.0	525.0	-6.1	-26.0	18.8	684.6	636.8	221.7	5.1	1.000156
18500.0	514.9	-7.2	-26.4	19.7	674.1	635.5	185.9	3.3	1.000154
19000.0	505.1	-8.2	-26.9	20.6	663.9	634.2	136.2	3.8	1.000152
19500.0	495.2	-9.4	-27.7	20.8	653.8	632.8	111.0	5.9	1.000149
20000.0	485.3	-10.7	-29.0	20.5	643.9	631.3	125.9	5.8	1.000146
20500.0	475.6	-11.9	-30.2	20.1	634.1	629.8	150.9	8.4	1.000144
21000.0	466.1	-13.2	-31.5	19.7	624.5	628.2	189.0	16.5	1.000142
21500.0	456.8	-14.5	-32.7	19.4	615.0	626.7	196.3	24.9	1.000139
22000.0	447.7	-15.7	-34.0	19.0	605.8	625.1	195.1	30.6	1.000137
22500.0	438.8	-17.0	-35.2	18.7	596.5	623.6	190.8	29.0	1.000135
23000.0	430.0	-18.3	-36.5	18.3	587.6	622.0	181.5	23.7	1.000132

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET *SL		UPPER AIR DATA		GEODETIC COORDINATES	
11 MAY 84		1*20U2J277		32.40043 LAT DEG	
ASCENSION NO. 277		1230 MDT		106.37033 LON DEG	
		TABLE 6 Con't			

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
23500.0	421.4	-19.6	-37.8	17.9	578.8	620.5	171.5	15.1	1.000130
24000.0	413.0	-20.9	-39.0	17.6	570.1	618.9			1.000128
24500.0	404.8	-22.1	-40.3	17.2	561.6	617.3			1.000126

MANDATORY LEVELS

STATION ALTITUDE 3989.03 FEET *SL
11 MAY 84
ASCENSION NO. 277

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

1°20020277
WHITE SANDS
TABLE 7

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
				DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4918.	27.4	-1.5	9999.0	9999.0XX
800.0	6555.	21.5	-6.1	9999.0	9999.0XX
750.0	8468.	16.1	-9.7	341.7	15.5
700.0	10371.	11.2	-12.2	346.1	8.4
650.0	12378.	5.7	-16.7	14.5	18.7
600.0	14510.	2.1	-22.4	279.6	24.7
550.0	16787.	-3.6	-25.2	273.5	19.2
500.0	19233.	-8.9	-27.1	120.7	4.7
450.0	21878.	-15.4	-33.7	195.3	29.5
400.0	24753.	-22.8	-41.0		

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3997.70 FEET MSL
 11 MAY 64
 ASCENSION NO. 47 1230 MDT

SIGNIFICANT LEVEL DATA
 1720060347
 C M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 8

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
879.1	3997.3	35.2	-1.0	10.0
873.1	4165.7	30.3	-1.2	13.0
850.0	4946.7	27.5	-0.5	16.0
700.0	10423.8	11.4	-11.4	19.0
635.5	12209.3	6.4	-13.2	23.0
637.5	12959.0	6.1	-17.8	16.0
516.9	13472.3	-6.7	-27.0	18.0
500.0	19322.4	-8.9	-26.7	22.0
477.1	20559.6	-11.9	-26.3	29.0
400.0	24850.8	-22.2	-19.0	20.0

STATION ALTITUDE 3997.50 FEET MSL
11 MAY 84
ASCENSION NO. 47

UPPER AIR DATA
1°20'06.00N
S M R

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 9

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	878.1	35.2	-1.0	10.0	989.6	684.9	190.0	4.1	1.000243
4000.0	878.0	35.1	-1.0	10.0	989.8	684.8	190.1	4.1	1.000243
4500.0	863.1	29.1	-8	14.3	992.3	678.2	205.9	3.1	1.000243
5000.0	848.4	27.3	-6	16.0	981.0	676.2	232.2	2.5	1.000243
5500.0	833.5	25.9	-1.5	16.3	968.6	674.5	263.7	2.6	1.000239
6000.0	818.8	24.4	-2.5	16.6	956.4	672.8	286.5	3.4	1.000235
6500.0	804.5	22.9	-3.5	16.9	944.4	671.1	299.7	4.4	1.000231
7000.0	790.3	21.5	-4.5	17.1	932.5	669.4	311.5	4.7	1.000227
7500.0	776.4	20.0	-5.5	17.4	920.9	667.7	325.5	4.6	1.000223
8000.0	762.8	18.5	-6.5	17.7	909.4	666.0	338.5	4.9	1.000219
8500.0	749.4	17.1	-7.5	17.9	898.0	664.2	348.6	5.5	1.000216
9000.0	736.2	15.6	-8.5	18.2	886.8	662.5	356.1	6.1	1.000212
9500.0	723.3	14.1	-9.5	18.5	875.5	660.8	364.9	5.7	1.000209
10000.0	710.6	12.6	-10.5	18.8	864.9	659.1	371.5	5.3	1.000205
10500.0	698.0	11.2	-11.4	19.2	854.1	657.4	377.7	5.1	1.000202
11000.0	685.3	9.8	-11.9	20.3	842.7	655.7	383.3	5.4	1.000199
11500.0	672.8	8.4	-12.4	21.4	831.4	654.1	387.7	5.9	1.000197
12000.0	660.6	7.0	-12.9	22.5	820.4	652.5	392.5	6.5	1.000194
12500.0	648.5	6.3	-14.8	20.3	807.5	651.6	392.2	7.5	1.000189
13000.0	636.5	6.0	-17.9	16.0	793.5	651.2	393.0	8.7	1.000184
13500.0	624.5	4.8	-18.7	16.2	781.9	649.8	392.5	9.6	1.000181
14000.0	612.8	3.7	-19.5	16.4	770.5	648.5	383.3	10.6	1.000178
14500.0	601.2	2.5	-20.3	16.6	759.2	647.1	376.0	11.9	1.000175
15000.0	589.9	1.4	-21.1	16.7	748.0	645.7	372.7	12.5	1.000172
15500.0	578.8	0.2	-22.0	16.9	737.1	644.3	370.4	13.0	1.000170
16000.0	567.9	-1.0	-22.8	17.1	726.3	642.9	368.3	13.5	1.000167
16500.0	557.2	-2.1	-23.6	17.3	715.7	641.6	365.8	11.8	1.000164
17000.0	546.7	-3.3	-24.5	17.5	705.3	640.2	362.0	9.2	1.000161
17500.0	536.4	-4.4	-25.3	17.6	695.0	638.8	355.4	6.9	1.000159
18000.0	526.3	-5.6	-26.2	17.2	684.9	637.4	345.5	5.3	1.000156
18500.0	516.3	-6.6	-27.0	16.1	674.9	636.0	328.4	4.0	1.000154
19000.0	506.3	-8.1	-26.7	20.5	665.1	634.4	303.4	3.5	1.000152
19500.0	496.5	-9.3	-26.6	23.0	655.3	632.9	290.3	3.9	1.000150
20000.0	486.8	-10.6	-26.3	26.0	645.6	631.4	278.4	4.5	1.000148
20500.0	477.3	-11.9	-26.3	28.9	636.0	629.9	272.2	5.5	1.000146
21000.0	467.7	-13.1	-27.7	26.0	626.1	628.4	270.3	6.8	1.000143
21500.0	458.3	-14.4	-29.1	27.0	616.4	627.0	269.1	8.2	1.000140
22000.0	449.1	-15.4	-30.5	25.9	606.9	625.5	269.8	8.9	1.000138
22500.0	440.1	-16.6	-32.0	24.9	597.5	624.1	271.0	9.4	1.000135
23000.0	431.3	-17.8	-33.4	23.8	588.2	622.6	272.1	9.9	1.000133

STATION ALTITUDE 3997.57 FEET MSL
 11 MAY 84 1230 MDT
 ASCENSION NO. 47

UPPER AIR DATA
 1320060047
 S M R

TABLE 9 Con't

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE					DIRECTION DEGREES(TN)	SPEED KNOTS	
23500.0	422.7	-19.0	-34.9	22.8	579.1	621.2				1.000131
24000.0	416.2	-20.2	-36.4	21.8	570.2	619.7				1.000129
24500.0	405.9	-21.3	-37.9	20.7	561.4	618.3				1.000126

STATION ALTITUDE 3997.30 FEET MSL
11 MAY 84 1230 MDT
ASCENSION NO. 47

MANDATORY LEVELS
1120360067
S P R

GEODETTIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

TABLE 10

PRESSURE MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TM)	SPEED KNOTS
857.0	4943.	27.5	-5	16.	228.7	2.5
803.0	6654.	22.5	-3.8	17.	303.1	4.9
750.0	8505.	17.1	-7.4	18.	348.7	5.5
700.0	10414.	11.4	-11.4	19.	5.0	5.1
650.0	12423.	6.3	-14.4	21.	313.7	7.3
600.0	14562.	2.4	-20.4	17.	275.0	12.1
550.0	16845.	-2.9	-24.2	17.	263.3	9.9
500.0	19295.	-8.9	-26.7	22.	195.6	3.7
450.0	21939.	-15.3	-30.4	26.	169.7	8.9
400.0	24819.	-22.2	-39.0	20.		

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

SIGNIFICANT LEVEL DATA
 1220060048
 S W R

STATION ALTITUDE 5997.70 FEET MSL
 11 MAY 84 1315 MDT
 ASCENSION NO. 48

TABLE 11

PRESSURE GLONOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
	AIR DEGREES	DEWPOINT CENTIGRADE	
978.2 3997.3	32.5	6.7	20.0
970.9 4242.5	29.9	1.4	15.0
950.0 4949.9	27.6	-5	16.0
798.8 6738.6	23.2	-4.0	16.0
700.0 10436.3	11.6	-11.2	19.0
620.1 13799.9	2.6	-15.9	24.0
593.9 14854.7	1.5	-21.5	16.0

STATION ALTITUDE 3997.36 FEET MSL
11 MAY 84 1315 MDT
ASCENSION NO. 48

UPPER AIR DATA
1320060048
S M R
TABLE 12

GEODETTIC COORDINATES
32.46034 LAT DEG
106.42367 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TW)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	678.2	32.5	20.0	996.7	682.5	210.0	5.0	1.000262
4000.0	878.1	32.5	20.0	996.7	682.5	210.0	5.0	1.000262
4500.0	863.2	29.1	16.0	992.3	678.2	218.1	5.6	1.000248
5000.0	848.5	27.5	16.0	980.7	676.4	227.2	5.4	1.000243
5500.0	833.9	26.2	16.0	967.9	674.9	237.0	5.2	1.000239
6000.0	819.6	25.0	16.0	955.3	673.5	246.9	5.3	1.000234
6500.0	805.4	23.8	16.0	942.9	672.1	256.4	5.4	1.000230
7000.0	791.4	22.4	16.2	930.9	670.4	262.0	5.6	1.000226
7500.0	777.4	20.8	16.6	919.4	668.6	264.5	5.7	1.000223
8000.0	763.6	19.2	17.0	908.1	666.8	266.8	5.8	1.000219
8500.0	750.1	17.7	17.4	896.9	665.0	269.2	5.8	1.000216
9000.0	736.8	16.1	17.8	885.9	663.1	273.0	6.2	1.000212
9500.0	723.8	14.5	18.2	875.1	661.3	276.4	6.6	1.000209
10000.0	711.0	13.0	18.6	864.4	659.5	279.5	7.1	1.000205
10500.0	698.4	11.4	19.1	853.7	657.7	282.2	7.5	1.000202
11000.0	685.5	10.1	19.9	842.7	656.0	286.1	7.9	1.000199
11500.0	673.0	8.7	20.6	830.8	654.4	293.7	7.9	1.000196
12000.0	660.6	7.3	21.4	819.6	652.8	301.0	8.1	1.000193
12500.0	648.5	5.9	22.2	808.5	651.2	307.9	8.5	1.000190
13000.0	636.6	4.6	22.9	797.7	649.6	314.1	8.9	1.000187
13500.0	624.9	3.2	23.7	787.0	648.0			1.000184
14000.0	613.4	2.3	24.0	774.9	646.9			1.000181
14500.0	601.9	1.8	18.5	761.9	646.3			1.000176

STATION ALTITUDE 3997.20 FEET MSL
 11 MAY 84
 ASCENSION NO. 48

MANDATORY LEVELS
 1720000048
 5 M R

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 13

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	4945.	27.6	-5.5	16.	226.2	5.4	
800.0	6690.	23.3	-3.9	16.	259.9	5.6	
750.0	8515.	17.7	-7.3	17.	269.2	5.8	
700.0	10425.	11.6	-11.2	19.	281.8	7.5	
650.0	12437.	5.1	-14.0	22.	307.2	8.4	
600.0	14567.	1.8	-20.0	18.			

STATION ALTITUDE 3229.00 FEET MSL
11 MAY 84 1422 MDT
ASCENSION NO. 175

SIGNIFICANT LEVEL DATA
132002027P
WHITE SANDS

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LONG DEG

TABLE 14

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
876.6	3989.0	33.9	9.2	22.0
864.4	4402.6	31.0	1.4	15.0
850.0	4893.6	28.7	-5.5	15.0
832.5	6555.0	24.2	-3.2	16.0
759.3	8126.9	18.8	-7.5	16.0
700.0	10390.4	12.5	-11.1	18.0
572.3	11495.7	9.3	-11.9	21.0
546.4	12642.7	6.0	-17.2	17.0
626.0	13419.3	4.2	-19.3	16.0
510.6	14083.0	2.6	-21.4	15.0
540.3	17290.3	-4.6	-26.5	16.0
500.0	19275.6	-10.1	-29.3	19.0
425.4	23300.2	-19.3	-35.6	22.0

UPPER AIR DATA

STATION ALTITUDE 3029.00 FEET MSL
11 MAY 84 1422 MDT
ASCENSION NO. 273

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

TABLE 1

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3969.0	876.6	33.9	9.2	22.0	989.6	684.4	300.0	9.9	1.000267
4000.0	876.3	33.8	9.0	21.8	989.5	684.3	300.0	9.9	1.000267
4500.0	861.5	30.5	1.0	15.0	985.4	679.9	298.1	10.2	1.000247
5000.0	846.9	28.4	-6	15.0	975.8	677.4	296.4	10.4	1.000242
5500.0	832.3	27.1	-1.4	15.4	963.5	675.8	294.8	10.7	1.000238
6000.0	818.1	25.7	-4.3	15.7	951.3	674.3	293.3	11.0	1.000234
6500.0	804.0	24.3	-3.1	16.0	939.4	672.7	291.8	11.3	1.000230
7000.0	790.0	22.7	-4.4	16.0	928.4	670.8	290.4	11.6	1.000226
7500.0	776.2	21.0	-5.8	16.0	917.7	668.8	289.1	11.9	1.000222
8000.0	762.7	19.2	-7.2	16.0	907.1	666.7	287.8	12.3	1.000218
8500.0	749.2	17.8	-8.1	16.3	895.7	665.0	287.5	11.8	1.000214
9000.0	735.9	16.4	-8.9	16.8	884.7	663.4	288.0	10.6	1.000211
9500.0	722.8	15.0	-9.7	17.2	872.5	661.8	288.7	9.4	1.000208
10000.0	709.9	13.6	-10.5	17.7	861.2	660.2	289.5	8.2	1.000205
10500.0	697.2	12.2	-11.2	18.3	850.0	658.5	288.6	6.5	1.000201
11000.0	684.6	10.7	-11.5	19.7	838.9	656.9	321.7	5.0	1.000199
11500.0	672.2	9.3	-11.9	21.0	828.0	655.2	333.7	5.6	1.000196
12000.0	659.9	7.6	-14.2	19.2	817.1	653.4	333.0	7.1	1.000192
12500.0	647.8	6.4	-16.5	17.5	806.5	651.7	327.9	8.8	1.000188
13000.0	635.9	5.2	-18.2	16.5	795.2	650.2	320.0	10.1	1.000184
13500.0	624.1	4.0	-19.6	15.9	783.8	648.8	302.5	10.4	1.000181
14000.0	612.5	2.8	-21.1	15.1	772.7	647.4	293.2	11.3	1.000178
14500.0	601.0	1.7	-22.0	15.1	761.3	646.0	287.4	12.4	1.000175
15000.0	589.6	0.5	-22.8	15.3	750.0	644.7	291.3	14.0	1.000172
15500.0	578.5	-0.6	-23.6	15.4	738.9	643.4	294.7	15.6	1.000169
16000.0	567.6	-1.7	-24.4	15.6	728.0	642.0	298.1	15.6	1.000166
16500.0	556.8	-2.8	-25.2	15.8	717.2	640.7	301.6	15.5	1.000164
17000.0	546.3	-3.9	-26.1	15.9	706.6	639.4	307.7	13.1	1.000161
17500.0	535.9	-5.2	-26.8	16.3	696.3	637.9	315.6	10.7	1.000159
18000.0	525.5	-6.6	-27.5	17.1	686.4	636.2	325.2	9.1	1.000156
18500.0	515.4	-8.0	-28.1	17.8	676.7	634.6	333.4	5.7	1.000154
19000.0	505.4	-9.5	-28.9	18.6	667.1	632.9	323.8	3.2	1.000152
19500.0	495.5	-10.6	-29.6	19.2	657.2	631.4	269.9	1.8	1.000149
20000.0	485.7	-11.8	-30.4	19.5	647.0	630.0	223.1	3.5	1.000147
20500.0	476.0	-12.9	-31.1	19.9	637.0	628.6	213.5	5.0	1.000145
21000.0	466.6	-14.0	-31.9	20.3	627.1	627.2	209.4	5.9	1.000142
21500.0	457.3	-15.2	-32.7	20.7	617.3	625.8	201.7	6.4	1.000140
22000.0	448.2	-16.3	-33.5	21.0	607.8	624.4	193.6	7.0	1.000137
22500.0	439.3	-17.5	-34.3	21.4	598.4	623.0			1.000135
23000.0	430.6	-18.6	-35.1	21.8	589.1	621.6			1.000133

STATION ALTITUDE 3940.00 FEET MSL
 11 MAY 84 1400 MDT
 ASCENSION NO. 278

MANDATORY LEVELS
 1320020278
 WHITE SANDS

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

TABLE 16

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT	PERCENT		DIRECTION DEGREES(TN)	SPEED KNOTS
857.0	4390.	28.7	-5	15.		296.8	10.4
803.0	6639.	23.9	-3.4	16.		291.4	11.4
750.0	8465.	17.8	-8.0	16.		287.5	11.8
700.0	10180.	12.5	-11.1	18.		294.8	7.0
650.0	12396.	6.7	-16.0	18.		329.1	8.4
603.0	14520.	1.6	-22.1	15.		287.4	12.5
557.0	16807.	-3.6	-25.8	16.		305.3	13.9
500.0	19248.	-10.1	-29.3	19.		308.7	1.9
450.0	21882.	-16.1	-33.3	21.		165.1	6.9

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

SIGNIFICANT LEVEL DATA
 1820060740
 5 M R

STATION ALTITUDE 3997.10 FEET MSL
 11 MAY 84 1422
 ASCENSION NO. 49

TABLE 17

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
978.0	3997.3	34.0	3.7	15.0
857.1	4356.2	31.8	2.0	15.0
750.0	4950.1	29.5	.2	15.0
771.0	7757.0	20.9	-5.8	16.0
700.0	10456.8	12.6	-10.4	19.0
630.0	13317.5	4.5	-14.3	24.0
407.9	14270.0	2.8	-19.8	17.0
584.6	15375.8	1.0	-21.9	16.0
500.0	19357.1	-9.4	-26.6	23.0
471.5	20839.7	-12.7	-26.6	30.0
400.0	24891.5	-22.4	-39.6	19.0

UPPER AIR DATA
132000Z0040
C. P.

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

STATION ALTITUDE 3997.30 FEET MSL
11 MAY 84
ASCENSION NO. 44

TABLE 1

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
3997.3	878.0	34.0	3.7	15.0	992.4	185.0	8.2	1.000253
4000.0	877.9	34.0	3.7	15.0	992.4	185.0	8.2	1.000253
4500.0	863.2	31.3	1.6	15.0	984.7	194.0	7.3	1.000247
5000.0	846.5	29.4	.1	15.0	974.2	205.0	6.7	1.000243
5500.0	833.9	27.3	-6.6	15.2	967.5	217.8	6.3	1.000236
6000.0	819.5	26.3	-2.0	15.4	951.0	231.7	6.3	1.000234
6500.0	805.4	24.8	-3.1	15.6	939.6	264.2	6.6	1.000230
7000.0	791.6	23.2	-6.2	15.7	928.4	255.3	7.2	1.000226
7500.0	777.9	21.7	-5.3	15.9	917.1	264.6	6.9	1.000222
8000.0	764.3	20.2	-6.2	16.3	904.1	276.7	5.7	1.000219
8500.0	750.8	18.6	-7.0	16.8	894.8	294.2	4.8	1.000215
9000.0	737.5	17.1	-7.8	17.4	883.4	301.5	4.9	1.000212
9500.0	724.4	15.5	-8.7	17.9	872.7	308.4	5.0	1.000209
10000.0	711.5	14.0	-9.6	18.5	861.9	313.1	5.2	1.000206
10500.0	698.9	12.5	-10.4	19.1	851.1	315.5	5.4	1.000202
11000.0	686.1	11.1	-11.0	19.9	839.8	317.7	5.6	1.000199
11500.0	673.6	9.6	-11.7	20.8	828.4	315.0	5.8	1.000196
12000.0	661.3	8.2	-12.4	21.7	817.7	313.0	5.9	1.000193
12500.0	649.3	6.6	-13.1	22.6	806.8	310.4	6.2	1.000191
13000.0	637.4	5.4	-13.6	23.4	796.2	308.4	7.3	1.000188
13500.0	625.7	4.2	-15.3	22.7	785.1	306.9	8.3	1.000184
14000.0	614.1	3.3	-19.1	19.0	773.2	302.1	9.4	1.000180
14500.0	602.6	2.4	-20.3	16.8	761.3	298.3	10.5	1.000176
15000.0	591.4	1.5	-21.3	16.3	749.5	296.0	11.4	1.000173
15500.0	580.2	.5	-22.1	16.3	738.2	294.2	12.7	1.000170
16000.0	569.1	-0.8	-22.6	17.2	727.5	294.0	13.1	1.000167
16500.0	558.3	-2.1	-23.1	18.1	717.0	297.4	11.4	1.000165
17000.0	547.6	-3.3	-23.7	18.9	706.4	302.5	9.8	1.000162
17500.0	537.1	-4.6	-24.2	19.8	696.5	305.9	7.8	1.000160
18000.0	526.9	-5.9	-24.8	20.7	686.4	307.2	5.1	1.000157
18500.0	516.8	-7.2	-25.5	21.5	676.5	311.2	2.5	1.000155
19000.0	506.9	-8.5	-26.1	22.4	666.9	268.3	1.1	1.000152
19500.0	497.2	-9.7	-26.6	23.7	657.1	210.1	2.2	1.000150
20000.0	487.4	-10.8	-26.5	26.0	647.0	196.7	3.9	1.000148
20500.0	477.9	-11.9	-26.5	26.4	637.0	191.0	5.0	1.000146
21000.0	468.4	-13.1	-27.1	29.6	627.2	187.1	6.0	1.000143
21500.0	459.0	-14.3	-28.7	28.2	617.4	184.1	5.9	1.000141
22000.0	449.8	-15.5	-30.2	26.9	607.9	179.0	7.5	1.000138
22500.0	440.8	-16.7	-31.8	25.5	598.5	176.3	8.2	1.000136
23000.0	431.9	-17.9	-33.4	24.1	589.2	176.3		1.000133

STATION ALTITUDE 3997.30 FEET MSL
 11 MAY 84
 ASCENSION NO. 49

UPPER AIR DATA
 1520060049
 S M R

1422 MDT

GEODETIC COORDINATES
 32.48034 LAT DEG
 106.42307 LON DEG

TABLE 18 Con't

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT			KNOTS	DEGREES(TN)	DIRECTION	SPEED KNOTS	
23500.0	423.2	-19.1	-35.0	22.8	580.1	621.1				1.000131
24000.0	414.7	-20.3	-36.6	21.4	571.2	619.6				1.000129
24500.0	406.4	-21.5	-38.3	20.1	562.4	618.1				1.000127

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

MANDATORY LEVELS
1820360749
S M R

STATION ALTITUDE 3997.30 FEET MSL
11 MAY 84 1422 MDT
ASCENSION NO. 49

TABLE 19

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TM)	SPEED KNOTS
850.0	4946.	20.6	.2	15.	203.8	6.7
800.0	6590.	24.2	-3.5	16.	248.9	6.8
750.0	8429.	19.5	-7.1	17.	294.7	4.8
700.0	10466.	12.6	-10.4	19.	315.3	5.4
650.0	12464.	6.9	-13.0	23.	310.5	6.2
600.0	14600.	2.2	-20.5	17.	297.6	10.7
550.0	16864.	-3.1	-23.5	19.	301.3	10.1
500.0	19337.	-9.4	-26.6	23.	219.4	1.7
450.0	21971.	-15.5	-30.2	27.	179.9	7.5
400.0	24850.	-22.4	-39.6	19.		

DATE
FILME